

### REMARKS

In view of the following remarks, Applicant respectfully requests reconsideration and allowance of the subject application. This amendment is fully responsive to all issues raised in the Office Action mailed June 27, 2005.

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#### Rejections Under 35 U.S.C. §102

Claims 24-26 and 30 were rejected under 35 U.S.C. §102(e) as being anticipated by U.S. Patent No. 6,324,627 to Kricheff, et al. (hereinafter, "Kricheff"). Applicant respectfully traverses these rejections.

10 Independent claim 24 includes a limitation requiring "specifying a block on the virtual disk within the operation." The Action asserts that Kricheff discloses this limitation, and cites col. 4, line 65 through column 5, line 22 and col. 7 lines 39-47 to support the assertion. Applicants disagree. The cited text reads as follows:

15 That is to say, for every attempt by CPU 2 or the computer system to access physical Disk Drive 6, VDS Controller 12 maps the access request into a corresponding request to an active virtual disk drive which has been configured by VDS Controller 12. Thus in the present invention, the VDS Controller 12, rather than CPU  
20 2, Disk Drive Controller 8 or the computer system, controls where on physical Disk Drive 6 data is stored and from where it is retrieved.

25 VDS Controller 12 thus controls which portion or portions of the total storage space of Disk Drive 6 is accessible by (i.e., is presented to) CPU 2 and the computer system. Specifically, VDS Controller 12 restricts communication access by CPU 2 and the computer system to portions of Disk Drive 6 necessary for operation of the computer system by the current user or users.  
30 Thus, in the case of an event such as infiltration by a computer virus in the present invention, the only portions of Disk Drive 6 which are susceptible to possible data corruption or destruction

are those portions corresponding to the virtual disk drive(s) presented by VDS Controller 12 to CPU 2 and the computer system. The remaining portions of Disk Drive 6 cannot be accessed by CPU 2 or the computer system, and the data contained therein therefore cannot be corrupted or destroyed.

Implementation of the present invention will now be discussed in additional detail. As is well known in the art, modern disk drives such as Disk Drive 6 depicted in FIGS. 2 and 3 are typically mapped into multiple blocks. Access to the disk drive is accomplished by specifying the block number or numbers being accessed. Such accessing schemes are well known in the prior art, and are disclosed for example in U.S. Pat. No. 5,519,844, the entirety of which is incorporated herein by reference.

Contrary to the assertion in the action, nothing in the text discloses or suggests specifying a block on the virtual disk within the operation, as recited in claim 24.

Independent claim 24 further includes a limitation requiring "presenting the completed corresponding operation to the virtual disk." The Action asserts that Kricheff discloses this limitation, and col. 7 lines 39-58 to support the assertion. Applicants disagree. The cited text reads as follows:

Implementation of the present invention will now be discussed in additional detail. As is well known in the art, modern disk drives such as Disk Drive 6 depicted in FIGS. 2 and 3 are typically mapped into multiple blocks. Access to the disk drive is accomplished by specifying the block number or numbers being accessed. Such accessing schemes are well known in the prior art, and are disclosed for example in U.S. Pat. No. 5,519,844, the entirety of which is incorporated herein by reference.

Referring to FIGS. 2 and 3 and as will be discussed below in additional detail in connection with FIG. 6, VDS Controller 12 generates the virtual disk drive configuration by first determining from Disk Drive(s) 6 the number of storage blocks contained therein. VDS Controller 12 then determines from user input the number of virtual disk drives to be configured, the number of blocks in each such virtual disk drive, and the virtual disk drive

which is to be active. VDS Controller 12 then generates a map of the virtual disk drive blocks to the physical disk drive blocks located on physical Disk Drive 6.

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Contrary to the assertion in the action, nothing in the text discloses or suggests presenting the completed corresponding operation to the virtual disk, as recited in claim 24.

Claims 25-26 and 30 depend from independent claim 24 and are  
10 allowable at least by virtue of their dependency.

Rejections Under 35 U.S.C. §103

Claims 1-40 were rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 6,260,120 to Blumenau (hereinafter,  
15 "Blumenau") in view of U.S. Patent No. 5,404,361 to Carsoso ("Carsoso"). Applicant respectfully traverses these rejections.

Independent claim 1 includes limitations directed to "an agent connected to the host, the agent having volatile memory for storing a first copy of a table, the table having entries to map virtual disk positions to locations on the storage  
20 devices." The Action asserts that Blumenau discloses this limitation, and now cites Fig. 4 and col. 25, lines 50-56 and col. 32 lines 43-55 to support the assertion. Independent claim 1 further includes limitations directed to "a controller coupled to the agent, the controller having non-volatile memory for storing a second copy of the table, the controller intermittently causing contents  
25 of the first copy of the table to be replaced by contents of the second copy of

the table." The Action asserts that Blumenau discloses this limitation, and now cites Fig. 21, item 27 and col. 32 lines 43-55 to support the assertion.

Applicants disagree. Initially, applicants note the Examiner's claim construction is untenable. The Examiner is asserting that the storage controller 27 in Blumenthal reads on both elements of the claim. Applicants note that claim 1 recites two separate elements; the storage controller 27 in Blumenthal cannot read on both elements.

Further, nothing in Blumenthal, alone or in combination with Casorso, discloses or suggests that the controller intermittently causes contents of the first table to be replaced by contents of the second table, as recited in claim 1. The Action appears to assert that Blumenthal discloses an arrangement in which the host is able to access a table on the controller if his is not available. Applicants take no position on the Examiner's assertion. However, Applicants note that the claim recites an arrangement in which the controller intermittently causes contents of the first table to be replaced by contents of the second table. The Examiner's assertion does not read on the claim language.

In sum, contrary to the assertion in the Action, Blumenau, alone or in combination with Casorso, neither discloses nor suggests the limitations of independent claim 1. Accordingly, Blumenau, alone or in combination with Casorso, cannot render obvious independent claim 1.

Dependent claims 2-11 depend from claim 1 and are allowable by virtue of this dependency, and by virtue of the limitations recited therein.

Independent claims 1 and claims 8-11 were rejected under 35 U.S.C. §103(a) as being unpatentable over by U.S. Patent No. 6,324,627 to Kricheff, et al. (hereinafter, "Kricheff"). Applicant respectfully traverses these rejections.

Independent claim 1 includes a limitation requiring "an agent connected  
5 to the host, the agent having volatile memory for storing a first copy of a table, the table having entries to map virtual disk positions to locations on the storage devices." The Action asserts that Kricheff discloses this limitation, and cites Fig. 3, item 8 and col. 8, lines 6-18 and col. 11, lines 6-11 to support the assertion. Applicants disagree.

10 Applicants note that Fig. 3, item 8 references a disk drive controller. Nothing in Kricheff discloses or suggests that the disk drive controller 8 stores a mapping table. Column 8, lines 6-18 is merely an exemplary configuration scheme. The text of column 11, lines 6-11 reads as follows:

15 Once this has been accomplished, as shown in Block 54, VDS Controller 12 generates a virtual disk drive configuration and mapping scheme such as those depicted in Tables 1-2, for example. As also shown in Block 54, VDS Controller 12 also stores this configuration and mapping scheme in the computer  
20 system's memory.

Contrary to the assertion in the action, nothing in the text discloses or suggests an agent connected to the host, the agent having volatile memory for storing a first copy of a table, the table having entries to map virtual disk positions to locations on the storage devices, as recited in claim 1.

25 Independent claim 1 further includes a limitation requiring "a controller coupled to the agent, the controller having non-volatile memory for storing a second copy of the table, the controller intermittently causing contents of the

first copy of the table to be replaced by contents of the second copy of the table." The Action asserts that Kricheff discloses this limitation, and cites Fig. 3, item 12, col. 11, line 36 through column 12, line 10, and column 11, lines 6-16 to support the assertion. Applicants disagree.

5 Applicants note that Fig. 3, item 12 references a VDS controller. As noted above, nothing in Kricheff discloses or suggests that the disk drive controller 8 stores a mapping table. Further, nothing in Kricheff discloses or suggests that the VDS controller 12 causes contents of a table stored in the disk drive controller to be replaced by the contents of a table stored in the VDS  
10 controller, or vice-versa.

Claim 1 further recites the limitation of "whereby during an input/output (I/O) operation, the host accesses one of the entries in the table stored on the agent to determine one of the storage device locations." The Action asserts that Kricheff discloses this limitation, and cites col. 7, lines 48-58 and col. 8,  
15 lines 20-29 to support the assertion. Applicants disagree. The cited text reads as follows:

Referring to FIGS. 2 and 3 and as will be discussed below in additional detail in connection with FIG. 6, VDS Controller 12 generates the virtual disk drive configuration by first determining  
20 from Disk Drive(s) 6 the number of storage blocks contained therein. VDS Controller 12 then determines from user input the number of virtual disk drives to be configured, the number of blocks in each such virtual disk drive, and the virtual disk drive which is to be active. VDS Controller 12 then generates a map of  
25 the virtual disk drive blocks to the physical disk drive blocks located on physical Disk Drive 6.

As depicted above in Table 1, if Virtual Disk Drive A 16 is active, VDS Controller 12 presents only that virtual disk drive to CPU 2  
30 and the computer system. Accordingly, when Virtual Disk Drive A

5 16 is active, VDS Controller 12 presents to CPU 2 and the computer system only virtual block numbers 0-299, which correspond to physical block numbers 0-299 of physical Disk Drive 6. In this case, as can be seen in Table 1, VDS Controller 12 uses an offset of 0 blocks to map the virtual disk drive blocks to the physical disk drive blocks.

Contrary to the assertion in the action, nothing in the text discloses or suggests that the host accesses one of the entries in the table stored on the agent, which corresponds to the disk controller in the Examiner's interpretation, to determine one of the storage device locations, as recited in claim 1.

Claims 2-11 depend from independent claim 1 and are allowable at least by virtue of their dependency.

15 Claims 12-23, 27-29, and 31-40 were rejected under 35 U.S.C. §103(a) as being unpatentable over by Kricheff in view of U.S. Patent No. 5,390,186 to Murata, et al. (hereinafter, "Murata").

Independent claim 12 has been amended to recited limitations neither disclosed nor suggested in the cited references. Accordingly, Applicants submit that independent claim 12 is allowable. Dependent claims 13-23 depend from independent claim 12 and are allowable at least by virtue of their dependency.

Claims 27-29 depend from claim 24, and are allowable at least by virtue of their dependency.

Claims 31-33 and 35 are canceled. Hence these rejections are moot.

Independent **claim 34** was rejected on the same basis as independent claim 24. Applicants traverse this rejection, and assert that same arguments asserted with reference to claim 24.

**CONCLUSION**

This application is in condition for allowance. Applicant respectfully requests reconsideration and prompt issuance of the present application.

Should any issue remain that prevents immediate issuance of the application,

5 the Examiner is encouraged to contact the undersigned attorney to discuss the unresolved issue.

Respectfully Submitted,  
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